

NOTES ON AUSTRALIAN DIPTERA. XXXIX.

FAMILY CHLOROPIDAE, Part iii.*

By JOHN R. MALLOCH.

(Communicated by Frank H. Taylor, F.R.E.S., F.Z.S.)

(Thirteen Text-figures.)

[Read 30th April, 1941.]

LIOSCINELLA Duda.

Knowia, viii, 1929, 168; *Folia zool. hydrobiol.*, ii, 1930, 71 and 106.

This genus was recently erected for the reception of those species of the old genus *Oscinella* Becker that have the frontal triangle glossy. I have attempted to clarify the distinctions between it and *Conioscinella* Duda, *Botanobia* Lioy, and *Oscinella* Becker in the present paper and hope that students of the family will be able correctly to assign their specimens by means of my key to the genera and the notes under each genus. The task is undoubtedly a difficult one and beginners in the study will have some trouble in placing the species.

In my concept of *Lioscinella* I include species that have the frontal triangle large and almost entirely or wholly glossy, though not always black. No species has the thorax entirely grey dusted, and nearly all have it either yellow with black markings or largely or entirely glossy-black, the mesopleura being without grey dust except in some of the species that may be doubtfully referred to *Botanobia*. No species of *Conioscinella* has yellow markings on the thorax, and though there are many species in *Botanobia* that have yellow thoracic markings, in the latter the frontal triangle is smaller, rarely extending to the middle of the frons, and it is usually grey dusted on the edges as in *Conioscinella*, or the edges are not sharply defined. There is one group of species that I have placed in the following key with some hesitation. This is the one in which the frontal triangle is almost entirely dull and preponderantly yellow. It contains species that are in the main yellow-coloured, with black or partly black mesonotal vittae, and the aristae always very short pubescent, in which respect they differ from the larger and darker coloured species of *Botanobia*, the latter having the aristae longer pubescent.

In order to prevent as far as possible misinterpretations of the species I am including all those in the complex in a single key. I have, after a careful consideration of the characters of the genotype of *Gaurax* Loew, decided that no species definitely referable to the genus is amongst those now available to me.

Key to the Species.

- | | |
|---|------------------------------|
| 1. Thorax and scutellum entirely, usually glossy, black, at most with a brown patch on each side at the mesonotal suture | 2 |
| Thorax largely yellow, if preponderantly glossy-black then at least the apex of the scutellum, or the entire humeral angles, yellow or brownish-yellow | 16 |
| 2. Halteres black or blackish-brown; triangle and mesonotum with a rather noticeable violet tinge or lustre; palpi dark brown; genae shiny dark brown, becoming yellow in front; legs pale yellow, only the mid and hind femora except their extremities, and the basal halves of the hind tibiae, black; face white; frons blackened on posterior half | <i>nigroviolacea</i> Malloch |
| Halteres pale yellow; frontal triangle and mesonotum without a violet tinge; remainder of characters not all as above | 3 |

* Continued from These PROCEEDINGS, lxxv, 1940, 261.

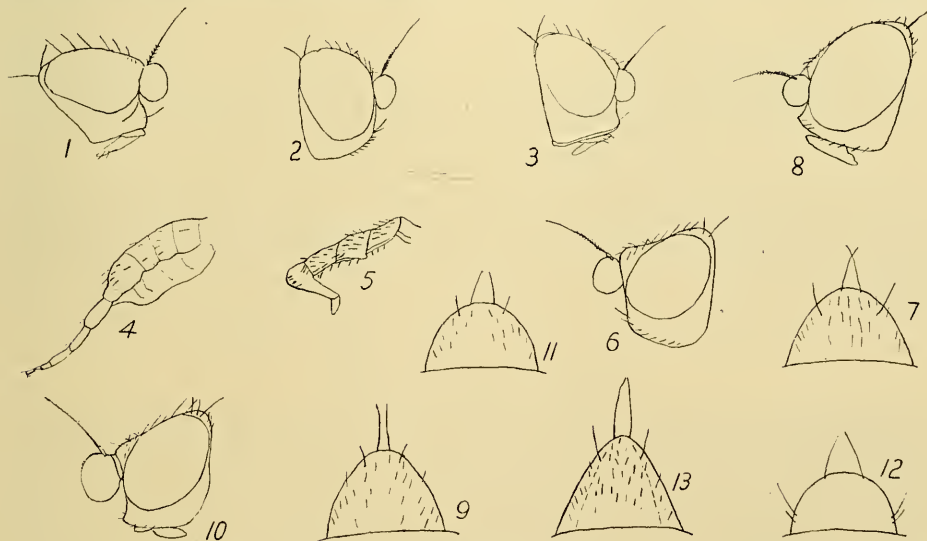
3. Palpi dark brown to black 3a
 Palpi yellow; mesonotum and scutellum without grey dusting; hairs normal 4
- 3a. Mesonotum and scutellum glossy-black, smooth, the lateral margins of mesonotum and the disc of the scutellum slightly grey dusted; frontal triangle poorly defined, extending to middle of frons, slightly grey dusted and dull on margin, glossy-black on the ocellar orbit; mesonotal hairs longer than usual, erect *Botanobia hirtipes*, n. sp.
 Mesonotum and scutellum glossy-black, quite closely and coarsely piliferous-punctate, without dusting; frontal triangle narrow, sharply defined, extending to well beyond middle of frons, entirely glossy-black, remainder of frons orange-yellow; mesonotal hairs short and subdecumbent *cairnsi*, n. sp.
4. Frons entirely black or dark brown, the triangle glossy-black, the area laterad of it in front dark brown and distinctly shiny; legs entirely honey-yellow; mesonotum with fine hairs, indistinctly punctured; scutellum with distinct piliferous-punctures, the hairs stiff and decumbent *unifrons*, n. sp.
 Frons partly yellow or dull brown; other characters not as above 5
5. Frons red or yellow, not blackened or distinctly browned posteriorly between the triangle and eyes; genae and face yellow or whitish-yellow; mesonotum rather distinctly punctured, closely and rather coarsely so in the dorso-central depressions 6
 Frons yellow, merging into black or dark brown between the triangle and eyes; mesonotum more finely haired, not distinctly punctured except finely in the dorso-central lines .. 9
 Frons yellow in front, merging into black or dark brown posteriorly between the triangle and eyes; triangle alutaceous; mesonotum and scutellum quite coarsely and closely piliferous-punctate *albifacies*, n. sp.
6. Legs entirely yellow *waterhousii*, n. sp.
 Legs yellow, the mid and hind femora and tibiae largely black 7
7. Robust species, with the mesonotum quite deeply and uniformly piliferous-punctate; hairs on sides of frons, and mesonotum, long; genae largely dark brown; profile of head as Figure 1 *crassa*, n. sp.
 Slender species, with the mesonotum finely and shallowly piliferous-punctate; hairs on the sides of frons, and on mesonotum, shorter; genae orange-yellow 8
8. Head in profile as Figure 2, the vibrissal angle suppressed *simulata*, n. sp.
 Head in profile as Figure 3, the vibrissal angle distinct *predatoris*, n. sp.
9. All the tibiae yellow and with two narrow brown annuli *biannulata*, n.n.
 Tibiae either entirely yellow or with one broad black mark 10
10. Penultimate sections of third and fourth wing-veins subequal in length, or the latter slightly the shorter; all coxae, femora, and tibiae, preponderantly black *nigropolita*, n. sp.
 Penultimate section of the third wing-vein very much shorter than that of fourth 11
11. Coxae and femora almost entirely, and all the tibiae, preponderantly black 12
 At least the fore and mid tibiae entirely yellow 14
12. Genae black or dark brown below, brownish-yellow above, not over one-third as high as width of the third antennal segment, and about one-tenth as high as eye *similis*, var. *femoralis* novum
 Genae yellow below, white above, about half as high as width of the third antennal segment and one-sixth as high as eye 13
13. Frons seen from the side with the face towards the light in front and along the eye margin with silvery white dust; femora and tibiae entirely brownish-black; marginal cell of the wing just beyond the apex of first vein not wider than the submarginal at the same point *albiceps*, n. sp.
 Frons without pale dust in front and along eye margin when seen from any angle; knees and apices of the tibiae orange-yellow; marginal cell of the wing just beyond the apex of first vein over 1.5 times as wide as submarginal cell at the same point *nigropolita*, n. sp.
14. Legs entirely yellow, rarely with a slight pale brown cloud near middle of ventral surface of the hind femur *similis*, var. *apicta* Malloch
 Legs with a brown or black mark on each mid and hind femur 15
15. Mid and hind femora each with a brown or black mark *similis*, var. *similis* Becker
 Mid and hind femora and basal halves of hind tibiae blackened *similis*, var. *fuscibasis* Malloch
16. Legs entirely yellow 17
 Legs in part black or dark brown, sometimes only the fifth tarsal segment dark 43
17. Scutellum blackened on at least a part of base, the black colour visible from above .. 18
 Scutellum yellow, rarely with a small blackish mark on each side at base that is not visible from above, but only from the side 26
18. Mesonotum glossy orange-yellow, with the presutural lateral margins and the posterior portions of the humeri lemon-yellow to white, the disc of mesonotum with five glossy-black vittae, the central one usually divided by a yellow line; scutellum whitish-yellow, narrowly black across the base, the apex produced papilliform between the apical pair of bristles; notopleurals 1+2; frons orange-yellow, the triangle with a broad black central vitta from over the posterior ocelli to anterior extremity; legs orange-yellow;

- pleura largely black, sternopleura with yellowish-white upper margin; gena about one-fourth as high as eye *excepta*, n. sp.
- Mesonotum broadly black on disc, not with narrow black vittae, and not white on lateral margins in front of the suture; scutellum usually more broadly black across base, and not produced papilliform between the apical pair of bristles 19
19. Frons black or very dark brown on upper third or more between the triangle and eyes; only two strong notopleural bristles present (1+1) 20
- Frons orange-yellow or yellow on the entire area outside the triangle; three notopleurals present 24
20. Pleura with three or four black spots; scutellum blackened at base, the black mark reduced to a mere line or broken in centre; notopleurals 1+1, and sometimes a short setule above the posterior one; no depressions of the posterior portions of the dorsocentral lines, the hairs more numerous there but the punctures not pronounced; prelabrum black in female, yellow or faintly browned in male; triangle glossy-black, vertex black on each side of the triangle; abdomen of male with long stiff, erect hairs *discolor*, n. sp.
- Pleura either entirely black, or with but two black marks 21
21. Notopleurals 1+1, no setule above the posterior one 22
- Notopleurals 1+1, and a distinct setule above the posterior one; pleura with but one black mark, on the mesopleura 23
22. Pleura entirely black; mesonotum glossy-black, yellowish on only a patch on each notopleural area; scutellum blackish-brown, fading into yellowish-brown at apex, the pale colour most evident below *impura* Becker
- Pleura yellow, with but traces of one or two brownish marks; mesonotum pale yellow along the notopleural region and on the postalar callosities; scutellum distinctly pale yellow at apex *pallidipleura*, n. sp.
23. Mesonotum glossy black except on the lateral margins *flavolateralis*, n. sp.
- Mesonotum with the large black discal mark quite widely broken at suture .. *suturalis*, n. sp.
24. Mesonotum with the large discal black portion distinctly shiny, but with evident greyish dust; scutellum with a very small dark mark on side of each basal angle, sometimes not visible from above *communis*, n. sp.
- The discal black portions of the mesonotum glossy, undusted; scutellum broadly black at base, yellow beyond 25
25. Triangle yellow across vertex at or just below edge; prosternum yellow; humeri usually entirely yellow *tasmaniensis* Malloch
- Triangle entirely black; prosternum black in centre; humeri largely or entirely black *varidorsata*, n. sp.
26. Frontal triangle highly glossy, largely or entirely black, very wide on upper edge where it extends almost across the entire vertex, and at least half the length of frons 27
- Frontal triangle not highly glossy, sometimes distinctly shiny on the central part of the black mark that rarely extends outside of the ocellar orbit, the posterior lateral angles well removed from eyes 30
27. Frontal triangle entirely black, extending to near middle of frons; abdomen of male with quite long erect stiff black hairs and the hypopygium large and pendulous, or projecting forward below abdomen at least to middle of venter *discolor*, n. sp.
- Frontal triangle not entirely black, extending to or nearly to anterior margin of the frons; male with the usual fine abdominal hairs and small hypopygium 28
- Frontal triangle entirely black, extending to anterior margin of frons; abdomen of male normal in hairing and structure *mesopleuralis* Becker
28. Mesopleura yellow; sternopleura with lower half black *sternopleuralis*, n. sp.
- Mesopleura with a black mark below; sternopleura yellow 29
29. The black discal mark on mesonotum broken at suture *mesopleuralis* Becker, var.
- The black discal mark on mesonotum not broken at suture *mesopleuralis* Becker
30. The three or five mesonotal vittae fused, forming a broad black discal mark 31
- The three or five black mesonotal vittae partially or entirely separated 33
31. Scutellum with four quite strong black bristles, the anterior pair nearer to the base than to the apical pair, a setule in front of each anterior bristle, and no noticeable discal hairs *communis*, n. sp.
- Scutellum with the short anterior pair of bristles nearer to the apical longer pair than to the base, the disc with many quite distinct hairs 32
32. Occiput, vertex, and the frontal triangle except its apex, glossy-black; third antennal segment blackened at only upper apex; hairs on mesonotum and abdomen almost entirely black or dark brown *tonnoiri* Malloch
- Occiput laterally, and vertex, yellow, triangle blackened except on lateral edges, shiny centrally, greyish dusted on sides; third antennal segment brownish-black; hairs on mesonotum and abdomen white, fine, and longer than usual *albohirta*, n. sp.
33. Mesonotal vittae bicoloured, black and red; antennae entirely orange-yellow 34
- Mesonotal vittae either entirely black, or the antennae are not entirely yellow 36

34. Thoracic vittae black, the central one red at suture *minutula*, n. sp.
 Thoracic vittae rufous, blackened at both extremities *extremitata*, n. sp.
 Thoracic vittae red, blackened at one or other of the extremities, not at both 35
35. Thoracic vittae red, blackened at anterior extremities *flavocapitata*, n. sp.
 Thoracic vittae red, blackened at only the posterior extremities; female genital processes
 setulose *semiatra*, n. sp.
36. Thoracic vittae bicoloured, red and black; third antennal segment partly or entirely
 infuscated 37
 Thoracic vittae entirely black 38
37. Third antennal segment large, narrowly infuscated above and at apex; female genital
 processes fine haired *nigrohirta* Malloch
 Third antennal segment small, entirely black-brown; female genital processes setulose
 *bivittigera*, n. sp.
38. Third antennal segment and the palpi bright orange-yellow 39
 Third antennal segment and sometimes the palpi darkened apically 40
39. Small species, averaging about 1 mm. in length; the black thoracic vittae dull, overlaid
 with grey dust, the central vitta divided longitudinally and not extending to posterior
 margin of mesonotum; female genital processes slender, finely haired
 *quadristriata* Becker
 Larger species, averaging about 2 mm. in length; the black mesonotal vittae glossy, the
 central one not divided longitudinally, entire *luteicornis* Malloch
40. All the hairs and bristles on thorax yellow or luteous *luteohirta* Malloch
 At least the bristles of the thorax black 41
41. Mesonotum with four narrow black vittae, the central one divided longitudinally, extending
 to only midway between suture and hind margin, shorter than the submedian pair; inner
 cross-vein a little beyond apex of first vein; marginal cell of the wing not wider than
 the submarginal just beyond apex of first vein *quadristriata* Becker
 Mesonotum with three broad black vittae, the central one attaining the hind margin and
 usually undivided longitudinally, and sometimes a short sublateral postsutural streak
 on each side; inner cross-vein of the wing slightly proximad of apex of first vein;
 marginal cell of wing wider than submarginal just beyond apex of first vein 42
42. Palpi black; the black mark on the frontal triangle confined to ocellar orbit
 *confluens*, n. sp.
 Palpi yellow; the black mark on frontal triangle extending outside the ocellar orbit .. 42a
- 42a. Occiput largely yellow; mesonotal vittae glossy-black, usually separated; scutellum
 slightly elongated, with two long and two much shorter preapical bristles, the latter
 much nearer the apical pair than to base, and the disc with many distinct black
 hairs *tincticornis*, n. sp.
 Occiput black; mesonotal vittae shiny black, overlaid with grey dust, fused in front and
 but indistinctly separated behind; scutellum short, rounded in outline, with a pair of
 moderately long apical and a pair of slightly shorter lateral bristles, the latter as near
 to base as to apical pair *communis*, n. sp.
43. Legs yellow, all the coxae, and a stripe on the anterior and another on the posterior side
 of the fore femora, and the palpi, black *tonnoiri* Malloch, male.
 Legs not coloured as above, some part of the mid and hind pairs besides the coxae black
 or dark brown 44
44. Legs yellow, fifth tarsal segment on all legs black or dark brown 45
 Legs otherwise marked with black or dark brown 46
45. Antennae entirely orange-yellow; mesonotum glossy orange-yellow, with a black mark in
 centre of anterior margin, and five diffuse black postsutural vittae, the anterior portions
 of the vittae indistinct; scutellum blackened; fore tarsus with fourth and fifth, other
 segments with only the fifth dark brown, fifth segment not dilated; thoracic bristles
 black *brunneoapicata*, n. sp.
 Antennae yellow, third segment black; mesonotum orange-yellow, with five glossy-black
 vittae, the discal three fused in front, tapered behind, median one entire, submedian
 pair not attaining hind margin, the sublateral pair consisting of short postsutural
 streaks; scutellum yellow; all tarsi with the fifth segment deep black and distinctly
 dilated; thoracic bristles yellow *nigrimana*, n. sp.
46. Wings hyaline, with a blackish mark on the costal margin from just beyond third vein
 to a little beyond apex of fourth that is hyaline in centre *apicipunctata* (Malloch)
 Wings hyaline, without a blackish costal mark as above 47
47. Hind tarsi with the apical three segments black or blackish-brown, the third sometimes
 yellow at base, and all three usually noticeably dilated; palpi infuscated apically .. 48
 Hind tarsi yellow or only slightly brownish apically, the apical three segments not at all
 dilated 50
48. Hind tarsus with the apical three segments brownish-black, but little dilated, the fourth
 segment longer than wide; hind tibia black from near middle to apex; all femora with
 a broad blackish-brown central band; fore coxae with brown mark at base; scutellum
 yellow only around the margin, disc black; mid tibial spur black and strong; upper
 posterior notopleural bristle minute *nigroannulata* Malloch

- Hind tarsus with the apex of third segment and the fourth and fifth entirely deep black, very distinctly dilated, the fourth segment broader than long; hind tibia with at most a narrow preapical brown ring; fore coxae yellow; scutellum entirely yellow or with only a narrow black central vitta; mid tibial spur yellow and weak 49
49. Upper posterior notopleural bristle almost as long as the lower one; scutellum yellow, rarely slightly darkened centrally at base *dilatata* Malloch
Upper posterior notopleural bristle lacking; scutellum yellow, with a narrow black central vitta *latitarsis*, n. sp.
50. Legs yellow, all the tibiae with a narrow central brown annulus or spot . . . *tibiella* Becker
Legs yellow, with more extensive or different black marking 51
51. Femora yellow, fore or hind pairs faintly browned; scutellum entirely yellow 52
Femora largely black 53
52. Fore femora darkened below; hind tibiae yellow; third antennal segment largely yellow; thoracic bristles yellow *luteohirta* Malloch
Fore femora yellow, hind tibiae browned on basal halves; third antennal segment entirely black; thoracic bristles black *froggatti*, n. sp.
53. The black mark on the frontal triangle confined to the ocellar orbit, dull; mesonotum with three black vittae that are interrupted or red at suture; scutellum entirely yellow, narrowed at apex and with the apical pair of bristles much closer at bases than usual (Fig. 9); antennae yellow; all femora largely black, the tibiae yellow . . *robusta*, n. sp.
Black mark on the frontal triangle extending outside the ocellar orbit; scutellum partly or entirely black; mesonotum broadly black on disc, the usual vittae fused 54
54. Scutellum entirely black; frontal triangle black, rather dull, appearing microscopically shagreened or greyish dusted; thorax shiny black, the humeri reddish-brown
. *subopacifrons*, n. sp.
Scutellum not entirely black; frontal triangle partly glossy, without distinct grey dust on disc; some part of the thorax besides the humeri pale, usually bright yellow 55
55. Humeri and scutellum entirely yellow; apical ventral spur on mid tibia brownish-yellow
. *flavohumeralis*, n. sp.
Humeri yellow, anterior portions black; scutellum more or less broadly black at base; apical ventral spur of mid tibia black 56
56. Genae not white dusted; scutellum very narrowly yellow at apex *tinctipes* Malloch
Genae distinctly silvery white dusted; scutellum with the apical two-thirds yellow
. *argenteiceps*, n. sp.

N.B.: The arrangement of the species in the text is not intended to indicate relationships except in a general manner.



Figs. 1-13.

- 1.—*Lioscinella crassa*, n. sp. Head in profile. 2.—*L. simulata*, n. sp. Head in profile.
3.—*L. predatoris*, n. sp. Head in profile. 4, 5.—*L. discolor*, n. sp. 4. Abdomen of female from the side. 5. Abdomen of male from the side. 6.—*L. bivittigera*, n. sp. Head in profile.
7.—*Botanobia tonnoiri* Malloch. Scutellum from above. 8, 9.—*B. robusta*, n. sp. 8. Head in profile. 9. Scutellum from above. 10.—*B. nigrohirta* Malloch. Head in profile. 11.—*B. tincticornis*, n. sp. Scutellum from above. 12.—*B. communis*, n. sp. Scutellum from above.
13.—*Prohippелates nigricornis* var. *flavus* Thomson. Scutellum from above.

GROUP I.

Thorax and scutellum black, generally glossy, nowhere yellow, at most brownish on each side at the suture.

SECTION A.

Frons usually yellow of various shades in front, but always black across vertex and on each side of the triangle.

LIOSCINELLA NIGROVIOLACEA Malloch.

Proc. Linn. Soc. N.S.W., lvi, 1931, 63.

A small glossy black species that is distinguished from all the others in the group by the dark brown to black knobs of the halteres, and the more or less distinct violet tinge on the frontal triangle and mesonotum. The notopleurals are arranged 1 + 2, and as usual the eyes are distinctly haired. Length, 1.5-2 mm.

Localities, N.S.W.: Sydney, Como.

LIOSCINELLA SIMILIS Becker.

Ann. Mus. Nat. Hung., ix, 1911, 153.

This species in all its varieties has the thorax glossy-black, without dusting, with usually a faint brownish patch on each side at the notopleural suture, and the scutellum without a trace of yellow colour. The face and genae are pale yellow, densely silvery white dusted, and the halteres yellow.

I have already described two varieties which are included in the foregoing key, and now describe a third variety below.

Originally described from Sydney, N.S.W., from which locality I have a series of specimens.

LIOSCINELLA SIMILIS, var. APICTA Malloch.

Proc. Linn. Soc. N.S.W., lvi, 1931, 66.

Originally described from Sydney, N.S.W. I have a series of specimens before me from the type-locality.

LIOSCINELLA SIMILIS, var. FUSCIBASIS Malloch.

Op. cit., lvi, 1931, 66.

The type-locality and that of some additional specimens before me is Sydney, N.S.W. All of these specimens are from the collection of the Health Department.

LIOSCINELLA SIMILIS, var. FEMORALIS, n. var.

♀. This variety differs from the others already described in having the femora and tibiae all extensively blackened. As in the other varieties the two posterior notopleural bristles are well developed. The peculiar globular basal half and the very slender apical half of the abdomen in the female are maintained throughout all the varieties.

Type and 2 paratype females, N.S.W.: Sydney (Health Dept.).

LIOSCINELLA ALBICEPS, n. sp.

♂. Agrees very closely in colour and general structure with *similis*, the main distinctions being as follow: Frons when seen from in front and a little to one side white dusted on anterior half, most noticeably so on a narrow line on each side; triangle extending barely beyond middle of frons; genae higher than in *similis*, about one-sixth of the height of eye, yellow below, white dusted above; eyes very indistinctly haired. Notopleural region brownish-yellow, mesonotum glossy-black, with fine moderately long black hairs at bases of which there are no distinct punctures; scutellum similar to the mesonotum, convex above; the upper posterior notopleural bristle reduced to a mere setule. Abdomen rather dull blackish-brown, ovate, tapered behind. Legs blackish-brown, apices of fore coxae and all tarsi paler brown. Wings greyish-hyaline, veins black. Knobs of halteres yellow. Length, 1.75 mm.

Type, N.S.W.: Sydney, 26.x.1924 (Health Dept.).

LIOSCINELLA NIGROPOLITA, n. sp.

♂, ♀. Similar to *similis* and *albiceps* in general colour and structure, differing mainly as follows: Genae and face in female yellow, in male white as in *similis*, frons not so extensively blackish-brown on the sides, dark for only a short distance before vertex; gena about one-sixth of the eye height, the latter quite densely and distinctly pale haired; arista a little longer pubescent than in *similis*; scutellar hairs longer than in that species; posterior notopleurals both long. Legs fulvous-yellow, fore coxae anteriorly, femora except apices, and tibiae except their extremities, glossy black. Wings greyish-hyaline, with a faint dark shading on costal portion over apex of the first vein that is also seen in some specimens of *similis*; penultimate section of third vein usually a little longer than that of fourth; extreme apices of third and fourth veins divergent. Halteres yellow. Abdomen of the female almost normally tapered to apex. Length, 2-2.5 mm.

Type, ♀, N.S.W.: Yass, 27.vi.1930 (K. English); allotype, A.C.T.: Molonglo R., 10.iv.1930 (L. F. Graham); paratype females, N. Territory: Darwin (Palmerston), April 1931, ex new swedes, and ex rotten swedes (W. Cottier).

The above records are all that are known to me of the habits of the larvae of species of this group.

LIOSCINELLA ALBIFACIES, n. sp.

♂. Frons about two-fifths of the head width and a little longer than wide, orange-yellow on anterior third or less, blackened behind, the triangle glossy, slightly shagreened, remainder of surface not shiny, triangle extending a little beyond the anterior third, sharp in front; surface hairs brown, about six orbital setulae on each side, the verticals longer than these and the ocellars; face and upper part of the genae densely white dusted, lower margin of genae brown; eye a little higher than long, slightly oblique, and about ten times as high as gena, with distinct pale hairs; genal hairs pale brown, upcurved, vibrissal setule pale yellow, the angle not developed. Antennae orange-yellow, inserted below middle of eye in profile, third segment about twice as wide as gena; arista brown, microscopically pubescent; palpi orange-yellow; prelabrum blackened. Thorax glossy-black, with but slight trace of grey dusting on lateral margins of the mesonotum, the hairs brownish, and moderately long, the bristles black, surface of the mesonotum distinctly and closely piliferous-punctate, the scutellum more coarsely so; notopleurals 1 + 2; scutellum with three pairs of bristles, longer to the apical pair. Legs rather stout, orange-yellow, coxae, femora except their apices, and the hind tibiae centrally, blackened. Wings brownish-hyaline, veins brown. First costal division four-fifths as long as the second and longer than the third, the latter about 1.5 times as long as fourth; third vein ending before, fourth slightly behind the wing tip; penultimate section of fourth vein distinctly longer than penultimate section of third and about one-fourth as long as its own penultimate section. Halteres with yellow knobs. Abdomen broadly ovate, glossy brownish-black, the hairs dark. Length, 1.75 mm.

Type and one paratype, A.C.T.: Blundell's, 26-27.ix.1930 (L. F. Graham).

LIOSCINELLA UNIFRONS, n. sp.

♀. Head black, frontal triangle glossy-black, almost entirely filling the vertex and extending to nearly the anterior margin, the remainder of surface shiny blackish-brown; face and genae red-brown. Frons at vertex about two-fifths of the head width, very slightly narrowed to anterior margin and as long as its vertical width, bristling and hairing normal, rather fine, black. Eye about 1.25 times as high as long, finely haired; gena about one-tenth as high as eye and one-third as high as width of the third antennal segment, the latter disc-like, orange-yellow; arista pubescent; palpi orange-yellow. Thorax glossy-black, with black hairs and bristles, mesonotum with rather distinct piliferous punctures, especially in the dorsocentral depressions; scutellum slightly flattened on disc, round in outline, with many quite coarse piliferous punctures, the hairs coarse, two long apical and two much shorter preapical bristles; notopleurals 1 + 2. Legs

including the coxae entirely pale yellow. Wings hyaline, veins dark brown. First costal division about three-fourths as long as second and subequal to third, the latter about 1.25 times as long as fourth; third vein ending well before, fourth slightly behind, wing tip; penultimate section of third vein over half as long as penultimate section of fourth, the latter about two-thirds as long as ultimate section of fourth. Knobs of halteres pale yellow. Abdomen ovate, glossy-black, black haired. Length, 1.75 mm.

Type, N.S.W.: Como (Peterson).

Unfortunately after the description the type was damaged, losing the head, so that the main distinguishing characters are unavailable for study in the specimen.

LIOSCINELLA BIANNULATA, new name.

Oscinosoma nigroannulata Malloch, Proc. Linn. Soc. N.S.W., lvi, 1931, 61; *nec. op. cit.*, 1, 1925, 338 (*Botanobia*).

Through an inexcusable oversight the writer described two species with the same name as above indicated and now makes a change in the name of the second species.

SECTION B.

Species with the frons except the triangle in various shades of yellow, not becoming black or dark brown on the upper part between the triangle and eyes.

LIOSCINELLA WATERHOUSII, n. sp.

♂. Head orange-yellow, frons dull, not darkened above, triangle glossy brownish-black, occiput black, with a narrow yellow line across vertex; face much paler than frons; antennae and palpi yellow; arista dark brown; all hairs and bristles black. Frons longer than its vertical width, narrowed in front, triangle narrowly separated from eyes at vertex, its sides slightly sinuate, apex at about one-third from anterior margin of frons; outer vertical bristles about two-thirds as long as inner pair, the latter barely as long as the post-verticals, ocellars about two-thirds as long as latter; surface hairs stiff, longer and proclinate in centre in front, the upper orbital series erect and setulose. Eye higher than long and erect, with short stiff hairs. Gena about one-eighth as high as eye and less than half as high as width of third antennal segment, the latter wider than long and broadly rounded at apex; longest hairs on arista about half as long as their basal diameter. Parafacial not visible in profile; face rather deeply sunken. Thorax glossy-black, notopleural area and pleural sutures brownish-yellow; all hairs and bristles dark. Mesonotum with minute piliferous punctures, densest in the dorsocentral lines where they are congregated posteriorly; humeral, notopleural (1 + 2), posterior pair of dorsocentrals, and both postalar bristles quite long and strong. Scutellum noticeably flattened on disc, rather short and somewhat pointed between the apical pair of bristles, the latter much longer than the scutellum, the preapical bristles reduced to mere hairs, discal hairs sparse, in minute punctures. Legs honey-yellow, quite strong, mid-tibial spur brown, longer than the tibial diameter. Wings hyaline, veins pale brown. Fourth vein ending almost in, third vein well in front of, wing tip, the costal division between apices of third and fourth veins about four-fifths as long as third section, the latter fully two-thirds as long as second; marginal cell about 1.5 times as wide as submarginal at apex of first vein; inner cross-vein a little proximad of apex of first vein; penultimate section of third vein about half as long as penultimate section of fourth; outer cross-vein at about twice its own length from inner; ultimate section of fourth vein about four times as long as penultimate, bent down at apex; ultimate section of fifth vein over half as long as penultimate. Halteres yellow. Abdomen shiny-black, yellow on centre of basal two tergites and very narrowly so on apices of the other tergites. Length, 2 mm.

Type, N.S.W.: Sydney, 16.xi.1924; paratype, same locality, 1.i.1925 (Health Dept.).

This species is dedicated to Dr. G. A. Waterhouse, who kindly presented several of the papers of this series before the Linnean Society of New South Wales.

LIOSCINELLA CAIRNSI, n. sp.

♂. A rather aberrant species, resembling in some respects certain species of the genus *Macrostyla*, but there are no evident hairs on the posterior upper portion of the mesopleura, and the wing venation is quite characteristic of *Lioscinella*. Head glossy-black, frons except the triangle orange-yellow, darker above, face yellow above, slightly darkened below, genae brownish-black, with grey dust; antennae orange-yellow, arista orange-yellow at base, fuscous beyond; palpi blackish-brown. Triangle narrow, not nearly filling vertical width, extending to anterior fifth of frons, glossy, entirely smooth and bare; surface hairs dark except in centre in front, the bristles black and not very strong. Antennae inserted at middle of eyes in profile, rather small, third segment with rounded apex; arista distinctly pubescent. Eye haired, distinctly higher than long, erect; over ten times as high as the very narrow gena. Thorax glossy-black, mesonotum rather coarsely and closely piliferous-punctate, the hairs subdecumbent and dark brown; scutellum as mesonotum, rather short and rounded in outline, with two moderately long apical and a number of lateral short bristles and many dark discal hairs, no warts at bases of the bristles. Notopleurals 1 + 2; mesonotum slightly wider than long. Legs orange-yellow, all coxae, and femora except their apices, glossy-black. No exceptional armature present, mid-tibial apical ventral bristle short and luteous; fore tarsi slender and as long as its tibia. Wings brownish-hyaline, veins dark brown. First costal section nearly as long as second and distinctly longer than third; inner cross-vein almost directly below apex of first vein; penultimate section of third vein subequal in length to that of fourth; first posterior cell widened to apex; fourth vein ending a little behind, third farther before wing tip; ultimate section of fourth vein about six times as long as penultimate. Halteres pale yellow. Abdomen broadly ovate, depressed, glossy-black, the surface hairs short and pale. Length, 2 mm.

Type, Queensland: Cairns District (F. P. Dodd).

I place this species provisionally in *Lioscinella*, but believe that it may yet be removed to a separate genus. Nothing is indicated on the label as to the habits of the species, and these may yet be made use of in generic segregations.

LIOSCINELLA CRASSA, n. sp.

♂. Head brownish-black, frons subquadrate, nearly half the head width, entirely shiny, red except on the glossy-black frontal triangle which extends almost six-sevenths of the distance to anterior margin, hairs brown, rather sparse, each orbit with about six erect setulae that are about as long as the vertical and ocellar bristles. Antennae orange-yellow, third segment infuscated above and at apex; arista fuscous, distinctly pubescent. Profile as Figure 1. Face and upper part of genae yellow, greyish dusted, lower part of genae brownish-black, shiny. Palpi orange-yellow. Eyes distinctly haired. Thorax glossy-black, upper edges of pleura and its sutures brownish-yellow. Mesonotum quite coarsely piliferous-punctate, especially in the dorsocentral lines which are broad behind; notopleurals 1 + 2; surface hairs long and dark; scutellum subtriangular, disc convex, but with irregular piliferous punctures, the six marginal bristles rather long. Legs stout, brownish-yellow, mid and hind coxae, all femora, and the hind tibiae, largely dark brown. Wing brownish-hyaline, veins brown. First costal division about three-fourths as long as second and subequal to third, the latter nearly twice as long as fourth; fourth vein ending a little behind apex of wing, third ending farther before it; penultimate section of fourth vein about one-third as long as ultimate section and twice as long as penultimate section of third; ultimate section of fifth vein over half as long as penultimate. Halteres yellow. Abdomen ovate, shiny blackish-brown. Length, 2.5 mm.

Type, S. Australia: Mt. Lofty Ranges (A. H. Elston).

The subquadrate wide frons with its entirely shiny surface is a good distinguishing character for this species.

LIOSCINELLA SIMULATA, n. sp.

♂. ♀. Similar to *waterhousii* in all respects except that in the male the mid and hind femora and the hind tibiae, and in the female the fore coxae, all femora, and

the hind tibiae, are predominantly black. Head in profile as Figure 2. The second wing-vein is less abruptly curved forward at its apex, and the second costal division is proportionately longer than in that species. Length, 2-2.5 mm.

Type, male, and two male paratypes, A.C.T.: Blundell's, 4.i.1930; allotype, same locality, 18.ii.1931 (A. L. Tonnoir).

It is possible that this is *subpilosa* Becker, and that it is merely a dark legged variety of *waterhousii*, but the latter appears to me to be improbable because of the lack of variation in the males in the two species. The wing venation, though somewhat inclined to be variable, does not vary as a rule in the characters cited above.

LIOSCINELLA PREDATORIS, n. sp.

♀. Differs from the female of *simulata* as follows: Vibrissal angle developed and the genae comparatively higher (Fig. 3); frontal triangle a little longer and the frons not curved down at anterior edge; mesonotum more glossy; fore coxae and the entire prosternum black; hind tibiae more conspicuously blackened; marginal cell of wing above the outer cross-vein fully 1.5 times as wide as the submarginal at the same point, not subequal to it; and the penultimate sections of third and fourth veins subequal, the fourth not distinctly longer than the third. Length, 2.5 mm.

Type, Tasmania: Eaglehawk Neck, 15.xi.1922 (A. L. Tonnoir).

GROUP II.

Thorax and scutellum partly yellow.

SECTION A.

Legs entirely yellow.

Subsection a.

Scutellum blackened more or less broadly across the base, or on basal angles.

LIOSCINELLA EXCEPTA, n. sp.

♂, ♀. Head orange-yellow, face and genae paler yellow, the triangle glossy-black, with the extreme apex and the posterior lateral angles broadly yellow; antennae yellow; arista dark brown; hairs and bristles of the frons and genae black except those on the lower margin of latter which are brownish-yellow. Triangle shorter and broader than in *tasmaniensis*, extending about three-fourths of the distance to the anterior margin. Inner verticals about three-fourths as long as the outer pair, slightly proclinate and incurved. Third antennal segment wider than long, broadly rounded at apex; arista subnude, second segment about five times as long as thick. Gena higher than in *tasmaniensis*, not as high as width of third antennal segment and about one-fourth as high as eye, the marginal hairs not so strong as in that species. Eyes distinctly haired. Mesonotum with five glossy-black vittae on an orange-yellow ground, the sublateral pair short, postsutural, the central broad vitta sometimes divided by a longitudinal yellow line; pleura glossy-black, yellow on lower part of the propleura, posterior upper part of the mesopleura, and on the sutures, the sternopleura with a whitish-yellow elongate mark above (not present in *tasmaniensis*). The posterior margin of the humeri and the region in front of the suture and laterad of the submedian black vitta also whitish-yellow. Mesonotal hairs inserted in minute punctures, most numerous on the yellow lines between the median and submedian black vittae; notopleurals 1 + 2; inner postalar bristle about half as long as the outer. Scutellum quite narrowly black across base, lemon-yellow, subtriangular, convex on disc, papillate between the apical pair of bristles, the latter a little longer than the scutellum and nearly twice as long as the preapical pair; discal hairs fine. In *tasmaniensis* the preapical pair of scutellar bristles is comparatively longer than in *excepta*, and situated about midway between the apical pair and the base instead of much nearer to the apical bristles as here. Legs rather stout, entirely yellow; mid femur with a rather pronounced apical flange-like scale on ventral edge on anterior surface; apical ventral spur on the mid tibia dark brown, slightly curved, and as long as the apical diameter of the tibia. Wings hyaline,

veins brown. Penultimate section of third vein distinctly shorter than that of fourth; ultimate section of fifth vein not half as long as penultimate section. Abdomen yellow, second tergite with three black spots or broadly black, tergites 3 to 5 inclusive broadly black at bases. Length, 3 mm.

Type, female, and allotype, A.C.T.: Blundell's, 26.ix.1930 (L. F. Graham); paratype female, N.S.W.: Como, from flowers (Peterson).

LIOSCINELLA TASMANIENSIS Malloch.

PROC. LINN. SOC. N.S.W., lvi, 1931, 62.

This species is very similar to *excepta*, but the broad black discal mark on the mesonotum presents a ready means of separation. The scutellum in this species is sometimes very slightly produced between the apical pair of bristles. Besides the type material I have seen one specimen from Blundell's, A.C.T.

LIOSCINELLA SUTURALIS, n. sp.

♂, ♀. Head orange-yellow, occiput, vertex, and frontal triangle glossy-black, upper portion of frons between triangle and eyes dull brownish-black; third antennal segment infuscated above at apex; palpi yellow; prelabrum partly brown or black. Triangle extending to a little beyond middle of frons, rather blunt in front. Eye a little higher than long, apparently bare, and about six times as high as gena, the latter white dusted above, the lower margin brown. Antennae of moderate size; aristae dark and with distinct pubescence. The orbits each with about six quite long erect setulae. Thorax orange-yellow, pleura with an elongate glossy-black mark on lower margin of the mesopleura, humeri and lateral edge of mesonotum to wing base lemon-yellow, disc of mesonotum glossy-black in front and behind, red across the suture on a rather broad band; scutellum yellow, more or less broadly blackened at base; postnotum glossy-black. Notopleurals 1 + 2; scutellum rather short and rounded in outline, with four almost equally spaced marginal bristles, the lateral pair the shorter, and some very short surface hairs. Legs entirely yellow, mid tibial apical ventral spur pale. Wings hyaline, veins blackish-brown. First costal section a little shorter than the second and distinctly longer than the third; inner cross-vein a little proximad of apex of first vein; first posterior cell slightly widened at apex; third vein ending farther before apex of wing than fourth does behind it; penultimate section of third vein shorter than that of fourth, but apparently this character is rather variable. Halteres yellow. Abdomen broadly ovate, shiny black except narrowly at base, where it is brownish-yellow. Hairs black or dark brown. Genital processes of female slender, finely haired. Length, 1.5 mm.

Type, female, Queensland: Brisbane, no other data (Dr. A. J. Turner); allotype, N.S.W.: Sydney, 23.i.1925 (Health Dept.).

The type-specimen has the scutellum discoloured owing to the pin passing through the thorax near to it, a condition that one meets with quite frequently in pale coloured species of this genus.

LIOSCINELLA VARIDORSATA, n. sp.

♂, ♀. Head orange-yellow, the occiput except a small patch near the inner upper angle of each eye, and the triangle except its anterior extremity, glossy-black. Antennae with a slight infuscation at insertion of arista; genae yellow, the lower marginal hairs yellow, becoming darker in front. Antennae moderate in size, aristae pubescent. Triangle extending to anterior fifth of frons, and almost filling the vertex. Eyes very indistinctly haired, about six times as high as gena. Thorax glossy-black, humeri behind and a large subtriangular mark on lateral margin behind each lemon-yellow, upper margin of mesopleura, the pleural sutures, a spot on each postalar callosity, and the apex of the scutellum orange-yellow. Notopleurals 1 + 2; scutellum with sometimes a minute elevation between the apical bristles, the latter much longer than the quite well developed preapical pair, the disc with some fine black hairs; mesonotum with but a few piliferous punctures which are extremely small. Legs orange-yellow; mid tibial apical ventral bristle brown. Wings hyaline, veins pale brown. First section of costa about

two-thirds as long as the second and distinctly longer than third; inner cross-vein slightly proximad of apex of first vein; penultimate section of third vein distinctly shorter than that of fourth. Halteres pale yellow. Abdomen shiny orange-yellow, each tergite with a broad black central fascia; genital processes of female black, slender, and finely haired. Length, 1.5-2 mm.

Type, male, and allotype, N.S.W.: Broken Hill, 9.vi.1925 (Health Dept.); paratypes, Como, 21 specimens taken on flowers (Peterson).

Judging from the fact that there were many more specimens in the miscellaneous lot of material sent to me by the late Carl F. Baker this must be a very common species where it occurs and ought to be readily obtained on flowers in the Sydney district.

LIOSCINELLA DISCOLOR, n. sp.

♂, ♀. Frons on anterior half bright orange-yellow, alongside of the triangle on upper half merging into dark brown, the triangle glossy-black, extreme apex sometimes yellow, occiput black, genae and the face pale yellow, with white dust; antennae orange-yellow; arista dark brown; prelabrum brown; palpi and proboscis yellow. Frons a little longer than wide, triangle appearing to fill the vertex because of slight distinction between its texture and that of the frons at its upper extremity, and extending to well beyond the middle, the surface almost smooth. Bristles all well developed and the orbital setulae strong. Third antennal segment wider than long, broadly rounded at apex; arista minutely pubescent. Eye slightly oblique, about as high as long, without hairs. Gena about as high as length of third antennal segment, and at centre about one-seventh as high as eye. Mesonotum glossy-black, posterior and lower edges of humeri, a large notopleural patch, and a spot on the postalar region orange-yellow; pleura orange-yellow, with a dark brown or black mark on each of the following sclerites: mesopleura, sternopleura, hypopleura, and pteropleura, sometimes faint on the last; scutellum orange-yellow, blackened across base, more broadly so on the sides. Mesonotum with rather dense fine black hairs inserted in almost indistinguishable punctures, most numerous and distinct on the dorsocentral lines; upper posterior notopleural reduced to a fine setule; posterior postalar a mere hair. Scutellum short, rounded in outline, apical pair of bristles longer than disc and much longer than the preapical pair. Legs honey-yellow, rather slender, the hind femora stoutest, mid tibia with a black apical ventral spur that is longer than the apical diameter of the tibia. Wings hyaline, veins brown. Penultimate section of third vein shorter than that of fourth, ultimate section of fifth vein curved, a little over half as long as its penultimate section. Knobs of halteres pale yellow. Abdomen stout, ovate, dark brown, glossy on dorsum. Basal half in females globular or almost so, the apical half appearing very slender (Fig. 4), with erect bristly hairs in male (Fig. 5). Length, 1.5-2 mm.

Type, female, N.S.W.: Sydney, 9.xi.1925; allotype, topotypical, 23.i.1925; and 3 paratypes, topotypical, 15.x.1924, 28.x.1924, and 29.i.1925 (Health Dept.).

LIOSCINELLA IMPURA (Becker).

Ann. Mus. Nat. Hung., ix, 1911, 150.

♀. This species, as I accept it, is very close to *discolor*, differing mainly in having the pleura almost entirely black, glossy, and the scutellum not pale yellow, only yellowish-brown, at its apex. The postalar region is not yellow, the yellowish notopleural mark is smaller and duller, and each femur is sometimes slightly browned centrally. The eyes have some very short but distinct hairs, while in *discolor* these are practically invisible in all the specimens before me. Length, 1.5 mm.

Type locality, N.S.W.: Sydney, the original locality is given as Parramatta. I have before me four females from Sydney, and Como.

LIOSCINELLA PALLIDIPLEURA, n. sp.

♂. Head pale yellow, face and genae densely white dusted, anterior yellow part of frons less distinctly white dusted, triangle, sides of frons from near apex of the triangle to vertex, and the occiput, black; palpi pale yellow; frontal bristles and hairs

black, genal hairs pale yellow. Eyes indistinctly short haired. Triangle extending to anterior fourth of frons; vertical, postvertical, ocellar, and orbital bristles distinct. Gena about one-sixth as high as eye. Mesonotum glossy-black, orange-yellow on posterior margin of humeri, a large patch on notopleural region, and a spot on each postalar callosity; pleura entirely yellow; scutellum yellow at apex, most broadly so centrally. Notopleurals 1+1; discal hairs fine and situated in minute punctures; apical pair of scutellars longer than the rounded scutellum, and much longer than the preapical pair. Legs entirely yellow. Apical ventral spur of mid tibia straight, black, longer than the apical diameter of the tibia. Wings hyaline, veins black. Penultimate section of third vein shorter than that of fourth. Halteres yellow. Abdomen glossy blackish-brown, paler on sides and below. Length, 1.5 mm.

Type, N.S.W.: Sydney, 29.x.1924; paratype, topotypical, 30.xi.1924 (Health Dept.). The paratype has faint traces of brownish pleural spots.

LIOSCINELLA FLAVOLATERALIS, n. sp.

This may be the same as *pallidipleura*, but for the presence of a setule above each posterior notopleural bristle *inter alia*.

Abdomen yellow, each tergite with a broad black fascia in centre, widest centrally. Length, 2-2.5 mm.

Type, female, and one paratype, N.S.W.: Broken Hill, allotype and 18 paratypes, Como, in writer's collection.

Subsection b.

Scutellum entirely yellow.

LIOSCINELLA MESOPLEURALIS (Becker).

Ann. Mus. Nat. Hung., ix, 1911, 150.

Frontal triangle yellow, broadly blackened centrally, extending to almost the anterior margin of the frons; occiput blackened across the entire upper half except narrowly below the vertex. The postvertical pair of bristles are much longer and stronger than the ocellars. Eyes haired. Disc of the mesonotum broadly glossy-black, the black mark rather deeply notched on each side at the suture. Notopleurals 1+2. Mesopleura with a black mark on lower margin. Scutellum entirely yellow. Legs yellow. Wings hyaline; venation much as in *varidorsata*. Length, 2-2.5 mm.

Originally described from Queensland: Brisbane. I have it from the type-locality and from Sydney, N.S.W.

LIOSCINELLA STERNOLEURALIS, n. sp.

♀. Very similar to *mesopleuralis*, differing in having the black discal mark on the mesonotum almost straight on the sides, not deeply notched on each side at the suture, no dark mark on the mesopleura below, and the lower half of the sternopleura black. Length, 2.5 mm.

Type, N.S.W.: Sydney, 20.v.1925 (Health Dept.).

Species of doubtful generic location.

The species from here to those listed under *Botanobia* are about intermediate between *Lioscinella* and *Botanobia*. Those that are mainly yellow in colour with the mesonotum variably marked with black, or black and red, may require a separate genus when the relationships are finally worked out, preferably in connection with life-history investigations in Australia, the others may be assigned to one or other of the already recognized genera.

LIOSCINELLA QUADRISTRIATA Becker.

Ann. Mus. Nat. Hung., ix, 1911, 154.

This species as I accept it on the basis of Becker's description is represented by only one specimen in the material now before me, but it may be that several others that I list below as species are merely varieties of it. Becker stated that the head in all

its parts is yellow, but in the specimen before me there is a small deep black mark on the ocellar orbit, and the third antennal segment has a slight apical infuscation. The triangle is rather dull and reaches to the middle of the frons, the vertex has the usual six bristles of moderate length, the frontal hairs are short and dark, with a few stronger erect setulae on the orbits, most evident above. The eyes are nearly round, very short, but not very densely haired, and about four times as high as the gena at middle. Antennae rather small, third segment slightly darkened at insertion of the arista; the aristae subnude, quite short; palpi yellow. The occiput has a pair of black marks that diverge above and do not extend to vertex. Thorax orange-yellow, almost glossy, mesonotum with four black, shiny but slightly grey dusted, vittae, the central pair ceasing about midway between suture and hind margin, the submedian pair a little longer but not attaining the anterior margin like the others, no postsutural vittae; pleura entirely without black marks. All hairs and bristles black. Scutellum entirely yellow, rather short and rounded in outline, with two moderately long apical and two much shorter subapical bristles and a number of black discal hairs. Postnotum black. Notopleurals 1+2. Legs entirely yellow. Wings hyaline, veins pale brown. First costal section about two-thirds as long as second and subequal to third; inner cross-vein slightly beyond apex of first vein; marginal cell just beyond apex of first vein not as wide as submarginal at same point; penultimate section of third vein about half as long as that of fourth. Abdomen shiny brownish-yellow. Genital processes of female slender, finely haired. Length, 1 mm.

Type-locality, N.S.W.: Sydney. One female Tarro, Hunter R., 18.x.1922 (Health Dept.).

LIOSCINELLA SEMIATRA, n. sp.

♀. Very similar in many features to *quadristriata*, but the head colour, especially above, is more lemon-yellow than orange-yellow, the antennae are entirely pale yellow, the third segment is slightly angulate at apex above, the aristae are dark and subnude, the hairs and bristles are yellow, and the occiput has a single large triangular central black mark the point of which is just below the vertical margin; palpi yellow. Thorax pale orange-yellow, shiny, the mesonotum with three red vittae, the posterior extremities of which are black, the central one entire, the others abbreviated behind, no postsutural sublateral vittae; postnotum black; scutellum yellow, with a small black mark low on each lateral basal angle that is not visible from above. All hairs and bristles luteous. Scutellum as in *quadristriata*. Pleura with a single deep black glossy elongate oval mark on lower half of the mesopleura. Notopleurals 1+2. Legs entirely yellow. Wings hyaline, veins brownish-yellow. First costal section not two-thirds as long as second and subequal to third; inner cross-vein slightly proximad of apex of first; penultimate section of third vein about half as long as that of fourth; marginal cell just beyond apex of first vein about 1.5 times as wide as submarginal at same point. Halteres yellow. Abdomen shiny orange-yellow, third and fourth tergites largely dark brown; genital processes brown, rather broad and with numerous stiff setulae or bristles and a few fine hairs. Length, 1 mm.

Type, Queensland: Eidsvold, 21.iv.1924 (T. L. Bancroft); paratypes, N.S.W.: Bourke, Sydney, 20.ii.1925 (Health Dept.).

LIOSCINELLA MINUTULA, n. sp.

♂. Quite similar to *semiatra*, differing in having the third antennal segment much larger, though this may be a sexual character. Thorax shiny orange-yellow, the mesonotum with three broad glossy-black vittae, the central one entire except for a rather wide red patch at the suture, the others less widely interrupted at suture; mesopleura with a similar mark to that in *semiatra*. Scutellum with a very small black basal lateral mark as in *quadristriata*, shape rather short and outline quite evenly rounded, the apical pair of bristles much longer than the subapical pair, the latter distinctly nearer to apical pair than to base, some black discal hairs present. In *semiatra* the basal pair of scutellar bristles are more nearly of the same length as the

apical pair and much nearer to base than to the latter. Notopleurals 1+2. Legs entirely yellow. Wings hyaline, veins brownish-yellow. Venation almost as in *semiatra*. Halteres yellow. Abdomen orange-yellow, extensively dark brown on dorsum centrally. Length, 1 mm.

Type, N.S.W.: Sydney, 16.xi.1924.

A specimen from Bourke, N.S.W., is very similar to *minutula* in thoracic markings, but the scutellum has the armature of *semiatra* and I provisionally refer it to that species.

LIOSCINELLA EXTREMITATA, n. sp.

♀. Similar to *minutula*, differing from it in having the anterior and posterior extremities of the mesonotal vittae black.

Type and paratype, N.S.W.: Sydney, 30.xi.1934.

This may be the female of *minutula* with which it agrees very closely in general colour and structure. The third antennal segment is very much smaller and the breaks in the black mesonotal vittae are wider. The genital processes are broad, black, and furnished with a number of erect black setulae and a few fine hairs.

LIOSCINELLA FLAVOCAPITATA, n. sp.

♂. A very small pale orange-coloured species, with the black frontal spot confined to the ocellar orbit, the mesonotum with a black central mark on the anterior margin that is hardly visible from above, and the abdomen slightly brownish. The antennae and palpi are yellow, the third segment of the former yellow and almost evenly rounded in front, the arista fuscous and subnude. Eyes almost round, very short haired, and about four times as high as the gena; frontal triangle shiny, extending to or slightly beyond middle frons, bristles short, black, some of the hairs centrally in front brownish. No dark spots on pleura. Hairs brownish, bristles black. Notopleurals 1+2; scutellum short, rounded in outline, with a pair of moderately long apical and a much shorter pair of preapical bristles that are slightly nearer the apical pair than the base, and some black discal hairs; no bristles between the single pair of dorsocentrals. Legs entirely yellow. Wings hyaline, veins almost colourless. First costal section about four-fifths as long as second and subequal to third; inner cross-vein very slightly beyond apex of first; marginal cell not wider than submarginal just beyond apex of first vein; outer cross-vein oblique. Length, 1 mm.

Type and one paratype, N.S.W.: Tarro, Hunter R., 18.x.1922 (Health Dept.); paratype, Como (Peterson).

LIOSCINELLA BIVITTIGERA, n. sp.

♀. A slightly larger species than most of the group with the general colour yellow. The entirely brownish-black third antennal segment also readily distinguishes it from all the others. Head (Fig. 6) orange-yellow, with a small black spot on the ocellar orbit, and a large subquadrate one on the central half of the occiput that is sometimes narrowed at vertex. Frontal triangle rather poorly defined, shiny, extending to middle of frons; frontal hairs mainly yellow, the bristles yellowish-brown. Eye higher than long, short haired, about five times as high as the gena at middle, the latter with yellow marginal hairs. Antennae of moderate size, basal two segments orange-yellow, third brownish-black; arista pale brown, distinctly pubescent; palpi orange-yellow. Thorax shiny orange-yellow, the mesonotum glossy, with three dark vittae that may be black on only the posterior extremities and the anterior extremity of the central one or also on the presutural portions of the submedian pair; pleura and scutellum yellow, the latter with the apex slightly produced, two moderately long apical and two much shorter preapical bristles, and numerous discal hairs, all black, the mesonotal hairs preponderantly yellow, bristles dark brown. Notopleurals 1+2; no setulae between the dorsocentrals. Legs entirely orange-yellow, mid tibia with the apical ventral bristle luteous. Wings hyaline, veins brownish-yellow. First costal section hardly two-thirds as long as the second and distinctly longer than third; inner cross-vein very slightly

proximal of apex of first vein; penultimate section of third vein over half as long as that of fourth; fourth vein ending slightly behind third much farther before wing tip; marginal cell just beyond apex of first vein a little wider than submarginal at same point. Halteres yellow. Abdomen shiny orange-yellow, with broad dark brown or black fascia on each of the intermediate tergites; genital processes blackish-brown, rather broad, with some setulose hairs and fine pile. Length, 2 mm.

Type and one paratype, N.S.W.: Collaroy, 22.i.1924, no collector's name or other data on label (Health Dept.).

LIOSCINELLA TINCTIPES Malloch.

PROC. LINN. Soc. N.S.W., lvi, 1931, 63 (*Oscinosoma*).

♀. A glossy-black species, the head yellow, genae pale yellow, without white dust, darker yellow below, triangle glossy-black, apex yellowish, extending to anterior third of frons, the latter yellow to hind margin; occiput black, brownish on lateral edges. Antennae orange-yellow, arista dark brown, subnude; palpi orange-yellow. Thorax glossy-black, with a lemon-yellow mark along each lateral margin that is widest at suture, the hind margins of humeri and a mark on each postalar region yellowish; scutellum narrowly brownish-yellow at apex. Mesonotum sparsely black haired, most numerous so in the dorsocentral lines, but without distinct punctures; notopleurals 1+2. Scutellum convex, with two long apical and two much shorter lateral bristles and some discal hairs, not distinctly punctate. Wings hyaline, veins fuscous. Second costal section about 1.5 times as long as second; penultimate section of third vein about half as long as penultimate section of fourth; marginal cell just beyond apex of first vein about twice as wide as submarginal at same point. Halteres with yellow knobs. Legs fulvous-yellow, coxae and femora preponderantly black, hind tibiae blackened on basal two-thirds.

Tasmania: Eaglehawk Neck.

LIOSCINELLA ARGENTICEPS, n. sp.

♀. Very similar to *tinctipes*, differing as follows: Frontal triangle shorter, entirely black, occiput entirely black, genae distinctly silvery-white dusted, a little narrower than in *tinctipes*, brown on lower margins, scutellum lemon-yellow, black on the basal third on sides, more narrowly so in centre; wings brownish-hyaline, veins dark brown, penultimate sections of third and fourth veins subequal, marginal cell just beyond apex of first vein subequal in width to submarginal cell at same point. Length, 2 mm.

Type, Victoria.

The type lacks the antennae so that I cannot make a comparison of these organs with those of *tinctipes*.

LIOSCINELLA TIBIELLA Becker.

Ann. Mus. Nat. Hung., ix, 1911, 155.

This species is unknown to me, but if Becker's description is correct it ought to be easily identified. If he erred in saying tibiae for femora and did not notice the black apical three segments of the hind tarsi it may turn out to be the same as *dilatata* Malloch.

N.S.W.: Sydney.

LIOSCINELLA SUBOPACIFRONS, n. sp.

♂, ♀. Back of head, vertex and a small portion of upper orbits and the entire triangle black, face and anterior half or more of the frons orange-yellow, the latter with whitish dust on edges, parafacials and genae whitish, the latter yellow below and behind, triangle evenly though rather inconspicuously grey dusted on the entire area. Antennae and palpi orange-yellow, third segment of former at arista insertions and the arista dark brown. Frontal hairs and bristles and genal hairs dark brown, hairs on eyes pale. Frons at vertex about half the head width, narrowed to anterior margin where it is hardly more than half as wide as long; triangle not reaching beyond middle of frons, quite blunt; vertical and postvertical bristles distinctly longer than the

cruciate ocellar pair; orbital hairs quite long. Antennae normal; arista thickened at bases, distinctly pubescent, the longest hairs about as long as the basal diameter. Parafacials not visible in profile, much as in *simulata*; eyes a little longer than high. Thorax brownish-black, humeri, propleura and anterior portion of mesopleura red or reddish-brown, edges of the mesonotum and the upper half of the mesopleura slightly grey dusted, the mesonotum glossy on disc; scutellum glossy-black; sometimes the notopleural region is red. Hairs and bristles dark, the hairs fine, not inserted in punctures. Notopleurals 1+2; scutellum with six marginal bristles, only the apical pair long, disc convex, not punctate. Legs including the coxae fulvous-yellow, all femora with a broad dark brown band on apical half that does not attain the apex, and all tibiae with a corresponding even broader band on basal half or more that does not attain the base. Hairs and mid tibial spur dark. Wing hyaline, veins brown. First costal division about three-fourths as long as second and distinctly longer than third, the latter nearly twice as long as fourth; marginal cell just beyond apex of first vein wider than submarginal at same point; penultimate section of third vein distinctly shorter than penultimate section of fourth, the latter about one-fifth as long as its ultimate section; third vein ending before wing tip, fourth almost in it; ultimate section of fifth vein about half as long as penultimate in female, longer in male. Halteres yellow. Abdomen ovate, blackish-brown, shiny, with fine hairs. Genital processes of female slender; hypopygium of male with spike-like process. Length, 2-2.5 mm.

Type, male, allotype, and 17 paratypes, N.S.W.: Sydney (Health Dept.).

BOTANOBIA Lioy.

Atti Ist. Veneto, (3) ix, 1864, 1125.

This genus is so similar to *Lioscinella* that I have included the species in my composite key given above. I have in one or two of my previous papers indicated that this course might be adopted by me to prevent errors in generic assignment and specific identifications. The typical forms are stouter than is the general rule in *Lioscinella*, and they are more noticeably haired, having the frontal and mesonotal hairs longer, though in *L. hirtipes* these distinctions do not hold good. The frontal triangle is usually about half the length of the frons and not sharply limited, nor filling the entire vertex, glossy-black on the greater portion of its extent, the arista are distinctly pubescent, and the thorax is always partly yellow, though the scutellum may be entirely black. I place in this group the following Australian species:

BOTANOBIA APICIPUNCTATA (Malloch).

PROC. LINN. SOC. N.S.W., lii, 1927, 444.

This species was originally placed in the genus *Gaurax* Loew, but it appears to be more closely allied to the species now included with it herein. It differs from any other species so included in having the wings hyaline, with a blackish costal mark from just before the apex of the third to a little beyond the apex of the fourth veins that usually is partly hyaline in centre. Scutellum entirely black.

N.S.W.: Sydney. Type in collection of Health Department.

BOTANOBIA NIGROANNULATA Malloch.

Op. cit., 1, 1925, 338.

This species has the disc of the mesonotum sometimes largely black, the vittae being more or less distinctly fused, with greyish dust, the scutellum yellow on only the margin, the legs largely blackened, fore coxae yellow with a dark brown basal mark, the apical three segments of hind and apical two segments of mid tarsi blackish-brown, the former but little dilated. The upper posterior notopleural bristle is minute or lacking, second costal section about twice as long as first, penultimate section of third vein but little shorter than that of fourth, inner cross-vein very slightly proximad of level of apex of first vein.

N.S.W.: Sydney. Type in collection of Health Department. I have seen a third female specimen of this species, also from Sydney.

BOTANOBIA DILATA Malloch.

Op. cit., 1, 1925, 339.

This species has usually no black mark at base of the scutellum. The mesonotal vittae are rather variable in extent, and the upper posterior notopleural bristle is always about as well developed as the lower one. The brown mark on each femur is sometimes quite faint, pale brown, and confined to the ventral surface, but the apical three segments of the hind tarsus except the base of third are deep black and quite noticeably dilated.

N.S.W.: Sydney. Type in collection of Health Department. I have seen four additional specimens of the species from the type locality.

BOTANOBIA TONNOIRI Malloch.

Op. cit., lvi, 1931, 62.

This species was described from a male, in which sex the fore femora are furnished with a black streak on the anterior and another on the posterior surface, and the hind tarsi are entirely yellow. The palpi and the quite long fore coxae are black. Scutellum as Figure 7. It is entirely probable that there will be some sexual differences in this species, but I have no specimen of a female that would pass for that of this species from the type-locality. I believe that females that run down to Caption 32 in my key belong to this species although there are many points in which they differ from the male and it is with some misgiving that I adopt the course of accepting them as belonging to *tonnoiri*.

Tasmania: Burnie.

BOTANOBIA LATITARSIS, n. sp.

♂, ♀. Very similar to *dilata*, but readily distinguished from it by the presence of a black central stripe on the scutellum and the lack of the upper posterior notopleural bristle. The third antennal segment is rather broadly infuscated above and at apex, the triangle is broadly black centrally, only the posterior lateral angles being yellow. The eyes are very short closely pale haired, and the aristaе are short pubescent. Palpi yellow. The thorax is testaceous-yellow, shiny, with three broad black vittae on the mesonotum that are fused in front, the central one entire, the submedian pair falling short of the hind margin and tapered behind, and two short outer black postsutural vittae; pleura with a large black mark on the anterior spiracular region, a streak over the centre covering the lower part of the mesopleura and the hypopleura, and the lower half of the sternopleura, and the postnotum also black; scutellum with a posteriorly tapered central black streak; the mesonotal black markings very slightly greyish dusted. Posterior notopleural undeveloped. Scutellum of the short rounded type, with four quite strong black bristles, the anterior pair shorter than the posterior pair and about midway between the latter and base, disc with a few weak short black hairs. Legs yellow, hind tarsi with the apical three segments except the narrow base of the third segment deep black, and distinctly dilated, the fourth segment distinctly wider than long. In the female I can detect a very faint brownish ventral mark at middle of the hind femur and a similarly coloured narrow ring on the mid and hind tibiae near their apices. Apical ventral spur of mid tibia short and luteous. Wings hyaline, veins pale brown. First costal section about two-thirds as long as second and subequal to third; inner cross-vein slightly proximad of level of apex of first vein; penultimate section of third vein fully half as long as penultimate section of fourth; marginal cell just beyond apex of first vein about twice as wide as submarginal cell at same point; first posterior cell widened at apex, the third vein bent slightly forward at apex. Abdomen subopaque testaceous-yellow, each tergite except the composite basal one with a postmarginal fascia that is widened in centre. Length, 2 mm.

Type, female, A.C.T.: Blundell's, 27.ix.1930; allotype, lacking the head, topotypical, 26.ix.1930 (L. F. Graham).

BOTANOBIA LUTEICORNIS Malloch.

Op. cit., lvi, 1931, 64 (*Oscinosoma*).

In addition to the type material from Tasmania I have seen a specimen that I refer here from Sydney, N.S.W. (Health Dept.).

BOTANOBIA NIGRIMANA, n. sp.

♂, ♀. A robust glossy orange-yellow species that is distinguished from all the others dealt with herein except *brunneoapicata* by the yellow legs and dark fifth tarsal segment. Head orange-yellow, a black mark on the frontal triangle that extends more or less widely outside the ocellar orbit, and the third antennal segment black. Hairs and bristles yellow. Eyes distinctly pale haired. Genae about one-fifth as high as eye. Antennae rather large, the third segment not regularly rounded at apex, with a slight indication of an angle at upper apex; aristae black, short pubescent; palpi yellow. Triangle rather poorly defined, not nearly filling the vertex and falling short of attaining middle of frons. Thorax shiny orange-yellow, mesonotum with three glossy-black vittae that are confluent at anterior extremities, the central one reddish at suture, laterals tapered behind and not attaining the posterior margin, central one entire, a short black streak each side behind suture; anterior spiracular region slightly infuscated, mesopleura, pteropleura, sternopleura, and hypopleura, each with a large black mark; postnotum black; scutellum yellow. All hairs and bristles yellow. Notopleurals 1+2; hairs moderately long and fine; scutellum not elongated, with a moderately long pair of apical and a much shorter pair of preapical bristles and numerous quite long discal hairs. Legs orange-yellow, fifth tarsal segment on all legs deep black and distinctly swollen, apical mid tibial ventral spur luteous. Wings hyaline, veins pale brown. First costal section about four-fifths as long as second and about 1.5 times as long as third; inner cross-vein distinctly proximad of apex of first vein; penultimate section of third vein about half as long as that of fourth; first posterior cell but slightly widened at apex. Halteres yellow. Abdomen orange-yellow, dorsum black except at base and apex, hairs yellow. Hypopygium of male small, genital processes of female slender. Length, 2.5 mm.

Type, male, and allotype, mounted on same card with an empty puparium, N.S.W.: Young, reared from brachysectid gall, 10.x.1900 (W. W. Froggatt). Two paratypes, same data.

The specimens are rather teneral, but the description will, I believe, be found to be reliable for identification of the species.

BOTANOBIA BRUNNEOAPICATA, n. sp.

♂. This species agrees with the one described immediately above mainly in having the fifth tarsal segment dark and the legs otherwise orange-yellow, but the fourth segment of the fore tarsi is also dark, the colour is brown, not black, and the fifth segment is not noticeably swollen. The species is like *nigrimana* in being quite stout. Head with a black spot in the ocellar orbit and a brown mark in centre of occiput, the antennae entirely orange-yellow, third segment much smaller than in *nigrimana*, evenly rounded at apex; aristae dark brown, short pubescent. Gena about one-seventh as high as eye. Eyes distinctly haired. Bristles and hairs of frons black; triangle very small and poorly defined. Thorax glossy orange-yellow, mesonotum with a black mark in centre of anterior margin and three or five diffuse black vittae on posterior half that are fused behind and taper off in front; scutellum blackened; pleura marked as in *nigrimana* except that the propleura is not infuscated; postnotum black. Thoracic hairs and bristles black. Scutellum tapered behind, damaged by the pin, most of the bristles rubbed off, but the surface with many black hairs. Notopleurals 1+2. Legs orange-yellow, tarsi as described in first paragraph. Wings hyaline, veins pale brown. Venation almost as in *nigrimana*. Halteres yellow. Abdomen rather dull black, yellowish at base and below. Length, 2.5 mm.

Type, N.S.W.: Wahroonga, Sydney, 31.x.1926, no collector's name on label.

BOTANOBIA ROBUSTA, n. sp.

♂. Very similar to *brunneoapicata* in general appearance, being stout, and of a glossy orange-yellow colour. The black frontal spot is confined to the ocellar area, and the antennae are entirely orange-yellow, the arista are dark brown and short pubescent, there is a brown mark in centre of the occiput, the eyes are distinctly haired, and the palpi are orange-yellow. The gena is about one-ninth as high as the eye (Fig. 8). Frontal hairs and bristles black. Thorax shiny orange-yellow, glossy on mesonotum, the latter with three broad glossy-black vittae that are broken rather diffusely at the suture, the break sometimes consisting of a quite extensive red patch, the central vitta extending to posterior margin, the other two ceasing short of it; pleura with the usual four black spots rather large; scutellum not blackened on disc, longer and more tapered than usual, with the apical pair of bristles more closely placed than in the closely related species, two much shorter preapical bristles, and many moderately long discal hairs (Fig. 9); postnotum black. Dorsal hairs and bristles black. Notopleurals 1+2. Legs orange-yellow, all femora dark brown or blackish-brown except at extremities. Mid tibial apical ventral spur moderately strong, luteous. Wings hyaline, veins brown. First costal section nearly as long as second and almost twice as long as third; penultimate section of third vein about one-third as long as that of fourth; marginal cell about twice as wide as submarginal cell just beyond apex of first vein. Halteres yellow. Abdomen coloured as thorax, without black markings. Hairs pale brown. Length, 2.5 mm.

Type and one paratype, A.C.T.: Blundell's, 30.iv.1930 (A. L. Tonnoir).

BOTANOBIA FLAVOHUMERALIS, n. sp.

♀. Very similar to *discalis*, differing essentially in having the occiput mainly orange-yellow, only slightly browned in centre, the vertex yellow, darkened behind the ocelli, the posterior lateral angles of the triangle yellow, remainder of triangle glossy-black except the edges which are narrowly brownish, and the yellowish-white instead of black or dark brown mesonotal hairs. Despite the rather general nature of the type-specimen the legs show dark brown except at the extremities of the hind femora, and dark brown on the basal half or more of the hind tibiae; the mid femora show but little trace of darker colour.

Frontal triangle reaching to a little beyond middle of frons, the latter with numerous short black hairs and a series of rather closely placed setulae on each orbit; bristles normal; eye longer than high, slightly oblique, distinctly haired; gena entirely yellow, at middle about one-third as high as eye, with yellow lower marginal hairs; third antennal segment with infuscation above and at apex, shaped as in *tonnoiri*, but slightly smaller; arista short pubescent. The large black discal mark on mesonotum glossy, larger than in the type-specimen of *discalis*, extending over almost the entire area behind the suture, the pleural black marks so large that only the propleura and sutures are yellow; postnotum glossy-black. Notopleurals 1+2; scutellum rather shorter than usual in this group, with four black bristles, the apical pair not very closely placed, the preapical pair much shorter and placed rather high, nearer to apicals than to base, the discal hairs fine and yellow. Legs slender, the hind tarsi noticeably so, with the fifth segment slightly brownish, mid tibial apical ventral spur luteous, moderately long. Colour yellow, with brownish marks as noted in the introductory paragraph. Wings hyaline, veins brown. First costal section about 1.25 times as long as third and four-fifths as long as second; inner cross-vein a little proximad of apex of first; penultimate section of third vein fully half as long as that of fourth; veins 3 and 4 divergent at apices. Halteres yellow. Abdomen crushed in type, entirely dark brown, hairs yellow, genital processes slender. Length, 2.5 mm.

Type, A.C.T.: Blundell's, 30.i.1930 (L. F. Graham).

BOTANOBIA FROGGATTI, n. sp.

♂, ♀. This species is very similar in general features to the one described immediately above, but differs from it in having the third antennal segment entirely

black, the mesonotum with five glossy-black vittae, the hairs on scutellum mainly black, and the brownish-black leg marks confined to the basal half or more of the hind tibiae. Head orange-yellow, upper occiput mainly black, with a yellow patch on each side near angle of eye; frontal triangle with a black central stripe that covers the ocelli and tapers slightly to anterior extremity; frontal hairs mostly dark, the bristles black; basal two antennal segments brownish-yellow, third entirely black, not as large in either sex as in *tonnoiri*, and with less marked upper apical angle; arista black, short pubescent; palpi orange-yellow; genae yellow, with yellow marginal hairs, at middle about one-fifth as high as eye, the latter slightly oblique, about as high as long, distinctly haired. Thorax glossy orange-yellow, the mesonotum with five glossy-black vittae, the outer pair short, postsutural, the central one broad, entire, almost fused with the submedian pair in front of suture, the latter attaining neither anterior nor posterior margin of mesonotum and with a narrow break at the suture; pleura with five large black marks, one on the anterior spiracular area, the others on mesopleura, pteropleura, sternopleura, and hypopleura, the last usually faint or reddish; scutellum yellow, hairs black or partly so; armature as in the species described immediately preceding. Hairs on mesonotum mainly yellow, bristles black. Legs orange-yellow, with the basal halves or more of the hind tibiae dark brown, mid tibial apical ventral spur luteous, of moderate length. Wings hyaline, veins pale brown. Venation almost as in *flavohumeralis*. Halteres yellow. Abdomen orange-yellow at base and extreme apex, dark brown centrally, hairs brown. Length, 2.5 mm.

Type, male, allotype, and one female paratype, mounted on the same card, N.S.W.: Sydney, 16.iv.1921, from longicorn larva in *Acacia* sp. (W. W. Froggatt).

It appears entirely probable to me that this and some other related species that are labelled as "parasitic" or in such a manner as to indicate parasitism will be found to be inquilines, the larvae living in the burrows upon the fermenting frass or even upon dead or dying larvae of the burrowing species.

BOTANOBIA NIGROHIRTA Malloch.

PROC. LINN. SOC. N.S.W., liv, 1931, 65 (*Oscinosoma*).

♂. An orange-yellow species, with entirely concolourous legs, the black mark on the frontal triangle confined to the ocellar orbit, with a slight brown suffusion beyond it, the mesonotum with three glossy-black vittae, the central one more or less extensively red at the suture, and the pleura with two black marks, one on the mesopleura and the other on the pteropleura, the sternopleura sometimes slightly darkened below. The head is as in Figure 10, the third antennal segment quite large, broadly rounded in front, and with the apex narrowly infuscated, the arista dark and with the hairs fully as long as the basal diameter.

♀. Similar to the male in general characters, but with smaller third antennal segment, a black mark on the lower part of the sternopleura, and a fuscous mark on each humeral angle that is fainter in the males before me. The abdomen is blackish-brown except at base and apex, the genital processes are yellow at bases, blackish at apices, slender, and finely haired.

Type-locality, Tasmania. I have a male from A.C.T.: Blundell's, 10.x.1930 (A. L. Tonnoir), one from Queensland: Eidsvold, 26.iv.1924, reared from cotton boll (Baneroff), in teneral condition, and the female above described from N.S.W.: Sydney, 24.viii.1924 (Health Dept.).

BOTANOBIA ALBOHIRTA, n. sp.

♂. Head very similar to that of *nigrohirta*, but the antennae a little smaller, with the third segment entirely black. The frontal triangle is black centrally, the dark colour fading out as it approaches the margin which latter is yellow with greyish dust; occiput with a broad brown central mark. Arista distinctly pubescent, a little longer than in *nigrohirta*.

Thorax glossy orange-yellow, the disc of mesonotum broadly glossy-black, postsuturally entirely so; pleura with dark brown marks over anterior spiracular area, on

mesopleura, pteropleura, sternopleura, and hypopleura; postnotum entirely glossy-black; scutellum yellow. Mesonotal hairs quite long and fine, white, the bristles black. Notopleurals 1+2; scutellum slightly elongate, with four black bristles, the apical pair longer than the preapical, the discal hairs pale. Legs orange-yellow, yellow haired; mid tibial apical ventral spur luteous. Wings hyaline, veins pale brown. First costal section almost as long as second and about 1.25 times as long as third; inner cross-vein distinctly proximad of apex of first vein; penultimate section of third vein about half as long as that of fourth; third and fourth veins subparallel at apices. Halteres yellow. Abdomen shiny dark brown, paler at base, the hairs quite long and white. Length, 2.5 mm.

Type, N.S.W.: Myall Lakes, 3.ix.1922 (Nicholson).

BOTANOBIA TINCTICORNIS, n. sp.

♂, ♀. Very similar to *albohirta* in general characters, differing in having the antennae yellow, with only the apex of the third segment infuscated, and the mesonotum with quite broad glossy-black vittae, the submedian pair abbreviated in front and behind, the central one entire. Frontal triangle with a black mark that extends faintly outside the ocellar orbit; aristae distinctly pubescent. Marks on pleura black, three or four in number, the hypopleural one sometimes lacking; scutellum entirely yellow. Hairs on mesonotum usually whitish-yellow, those on the scutellum partly or almost entirely black, the margin of scutellum almost evenly rounded, the apical pair of bristles much longer than the preapical pair (Fig. 11). Legs entirely yellow, the hairs concolourous, apical ventral spur on mid tibia pale. Wings hyaline, veins pale brown. Venation as in *albohirta*. Halteres yellow. Abdomen blackish-brown, shiny, with pale hairs and some darker setulose hairs at apices of the tergites. Genital processes of female slender, finely haired. Length, 2 mm.

Type, male, A.C.T.: Blundell's, 27.ix.1930 (L. F. Graham); allotype and one paratype, Queensland: Brisbane (Dr. A. J. Turner); paratypes, Queensland: Southport (Dr. A. J. Turner); A.C.T.: Canberra, 7.xi.1929 (A. L. Tonnoir); N.S.W.: Ballina, iii.1926, "bred from beans".

I have no further information on this last listed specimen and am inclined to think that it may have been reared from larvae that were feeding on decaying beans. Many of the species in this subfamily are found in such habitats though very few, such as *Oscinella frit*, actually are responsible for damage to vegetation.

BOTANOBIA COMMUNIS, n. sp.

♂, ♀. Head dull yellow, the black frontal mark extending slightly outside the ocellar orbit; third antennal segment slightly darkened above at apex; aristae dark and with short pubescence; all the hairs and bristles on frons black, the hairs quite long and strong; palpi yellow. Triangle slightly greyish dusted even on the black part, extending to middle of frons; eyes haired, higher than long and five times as high as gena, the latter yellow, with several series of pale hairs behind, one dark upcurved bristle in front above the hairs; orbital setulae hardly longer than the erect hairs near anterior margin of triangle. Thorax pale orange-yellow, shiny, mesonotum with five black vittae, the three central fused in front and very narrowly separated by yellow lines behind, the outer pair short and postsutural, all with coating of grey dust; pleura with four black marks, the largest on the lower half or more of the sternopleura; scutellum yellow, with a minute black mark low on each lateral basal angle not visible from above. Notopleurals 1+2; scutellum short, rounded in outline, with four moderately strong bristles, the basal pair nearer to base than to apical pair, the disc with one or two hairs in front of basal bristles (Fig. 12). Prosternum yellow, with black central line, postnotum black, humeri sometimes with a faint brown mark in front. Hairs dark, bristles black. Legs yellow, apical ventral bristle on mid tibia black. Wings hyaline, veins dark brown. First costal section about two-thirds as long as second and subequal to third; marginal cell just beyond apex of first vein about 1.25 times as wide as submarginal at same point; penultimate section of third vein

about half as long as that of fourth. Halteres yellow. Abdomen shiny brownish-black, with dark hairs. Genital processes of female rather broad, with fine hairs only; hypopygium of male yellow, small. Length, 1.75 mm.

Type and allotype, mounted on same cardpoint, and 6 paratypes mounted on another along with a chironomid, Queensland: Eidsvold, no date or collector's name. One paratype, N.S.W.: Como, Dec., 1923, swept from flowers (Peterson).

I assume from the mass mounting and the presence of the chironomid with the type-series that the specimens were either taken on flowers or on a window.

BOTANOBIA HIRTIPES, n. sp.

♂, ♀. Head brownish-yellow, paler on anterior margin of the frons, the triangle largely glossy-black, its edges poorly limited and slightly dusted; antennae dark brown, third segment paler below and basally, sometimes almost entirely blackish-brown to black, aristaе concolourous; palpi fuscous to black; hairs and bristles on frons and genae black, hairs on eyes yellow. Frons at vertex almost half the head width, narrowed to anterior margin, triangle not extending across vertex, appearing narrower because of the indistinct edges, not reaching beyond middle of frons; hairs quite long, vertical and postvertical bristles longer than the ocellar pair; orbital setulae quite long. Face concave in profile, the parafacial narrowly visible; epistome produced as in most species of *Conioscinella* to which genus the species has some resemblance; gena about one-fifth as high as eye though not as high as width of third antennal segment, the latter rather larger than usual; the aristaе short pubescent. Thorax glossy-black, finely grey dusted along the margins of mesonotum, on upper half of mesopleura, and on the disc of the scutellum; hairs and bristles black. Mesonotum without distinct piliferous punctures, but with in most cases slight depressed dorsocentral lines; scutellum convex, with six marginal bristles, the apical pair much the longest, and some fine erect discal hairs; notopleurals 1+2. Postnotum glossy-black. Hairs longer than usual, erect. Legs black, or brownish-black, the tarsi usually more noticeably brown, the hairs dark, longer and more numerous in the male than usual. Wing greyish-hyaline, veins dark brown. First costal division almost as long as second and distinctly longer than third; fourth vein ending almost in wing tip, third well before it; penultimate section of third vein distinctly shorter than that of fourth, the latter about one-fifth as long as ultimate section; marginal cell just beyond apex of first vein distinctly wider than submarginal at same point; ultimate section of fifth vein about half as long as penultimate. Knobs of halteres yellow. Abdomen narrowly ovate, glossy-black, with rather long dark hairs, especially in the male. Genital processes of female slender, finely haired; hypopygium of male concealed. Length, 2-2.5 mm.

Type, male, allotype, and 4 paratypes, A.C.T.: Blundell's (L. F. Graham); paratype, Tasmania: Advent Bay (A. L. Tonnoir).

A rather aberrant species with some of the characters of *Conioscinella*.

BOTANOBIA CONFLUENS, n. sp.

♀. This species is readily distinguished from its allies by the black palpi and third antennal segment, and the yellow coloured thorax with three broad glossy-black vittae, the central one entire, the submedian pair abbreviated behind, and all three fused in front of the suture. Head orange-yellow, with a small black spot on the ocellar orbit, the triangle entirely dull and extending to only the upper third of frons. Hairs pale centrally, brown laterally, those on upper part of the orbits rather long, the bristles brownish-black, normal. Eye almost round, densely short haired, and about eight times as high as the yellow gena, the marginal hairs on latter yellow, two on vibrissal angle longer and brown. Antennae yellow, third segment brownish-black, broadly rounded at apex; aristaе dark brown, densely short pubescent; palpi rather thick, dark brown to black. Occiput dark brown, yellow on vertical margin. Thorax shiny orange-yellow, the mesonotum with three glossy-black vittae, the central one entire, the submedian pair tapered behind and not attaining posterior margin; pleura with four black spots; scutellum yellow. Hairs on mesonotum and scutellum mainly yellow,

bristles black. Scutellum rather short and rounded in outline, with a moderately long apical and one or two very short preapical pairs of bristles. Notopleurals 1+2. A small black spot at the anterior extremity of the notopleural suture against the humeri. Legs entirely orange-yellow, the apical ventral bristle on mid tibia yellow. Wings hyaline, veins brown. First costal section two-thirds as long as second and about 1.5 times as long as third; inner cross-vein distinctly proximad of apex of first vein; penultimate section of third vein a little over half as long as that of fourth; veins 3 and 4 slightly and evenly divergent to apices. Halteres yellow. Abdomen ovate, shiny orange-yellow, the tergites extensively dark brown, more broadly so centrally; genital processes dark brown, slender, and with some fine hairs. Length, 2.5 mm.

Type, N.S.W.: Sydney, 25.i.1925 (Health Dept.).

ADDENDA.

PSEUDOFORMOSINA Malloch.

Proc. Linn. Soc. N.S.W., lxiii, 1938, 355.

I erected this genus for the reception of *Chlorops nicobarensis* Schiner. I believe this species is a synonym of *Oscinis noctilux* Walker, described from New Guinea and included in the genus *Oscinella* by Becker in his revision of the Indo-Australian Chloropidae. The name of the genotype will therefore be *Pseudoformosina noctilux* (Walker).

CADREMA Walker.

J. Proc. Linn. Soc. London [1859], iv, 1860, 117.

In my revision of the North American species of this subfamily that have the hind tibia with a distinct apical or preapical ventral spur* I erected a genus *Prohippелates* for the reception of *Hippelates pallidus* Loew on the basis of the elongate dorsally flattened scutellum and its armature, the very long and strong hind tibial spur, and the possession in the male of two long fine hairs on the proboscis. Later in papers on the Pacific Islands species, I accepted as the same species one that had been named *nigricornis* by Thomson. I have some doubts about the propriety of accepting all the varieties, *bilineatus* de Meijere, *flavus* Thomson, and the typical form in which the third antennal segment is black as one species. The insect is found feeding in the larval stages in dead shell-fish and ought to be easy to rear so that the question of specific identities could be readily settled by anyone having access to such pabuli where the species occurs. I have now before me one female that is referable to this complex.

PROHIPPELATES Malloch.

Proc. U.S. Nat. Mus., xlvi, 1913, 260.

This genus will run down to *Cadrema* in my key to the genera given on a preceding page, but will be readily distinguished therefrom by the long hind tibial spur, which extends to the apex of the hind metatarsus, and by the flattened and elongate scutellum (Fig. 13).

PROHIPPELATES NIGRICORNIS FLAVUS Thomson.

The single specimen before me has the mesonotum entirely yellow except for a faint trace of two reddish vittae near the hind margin; the antennae are entirely yellow. In the variety *bilineatus* de Meijere the mesonotum has two black vittae and the antennae are yellow; in typical *nigricornis* Thomson the third antennal segment is black, and the mesonotum may have two dark vittae or be entirely yellow. Length, 2.5 mm.

Queensland: Townsville (F. H. Taylor).

This form is the one I accepted as *pallidus* Loew. It is common in the West Indies.

POSTSCRIPT.

EFTAYLORIA, new name.

Tayloria Malloch, Proc. Linn. Soc. N.S.W., lv, 1930, 98; *nec. Tayloria* Bourguignat, *Moll. Afr. Equat.*, iii, 1889, 38.

* *Proc. U.S. Nat. Mus.*, xlvi, 1913, 260.